Symbolic Execution Tool User Manual

This symbolic execution tool was developed under Microsoft windows XP and Maple 9.5.

You can use **examples.mpl** to try our Symbolic Execution Tool. There are two ways to use our examples file. One way is to test the examples and modules in batch input and the other way is to test the examples and the modules Interactively

Method 1: Test the Examples and the Modules In Batch Input

To run test, please type the following command:

restart;
read “C:\\symbolic execution tool\\Examples.mpl”;
infolevel[myname]:=2;

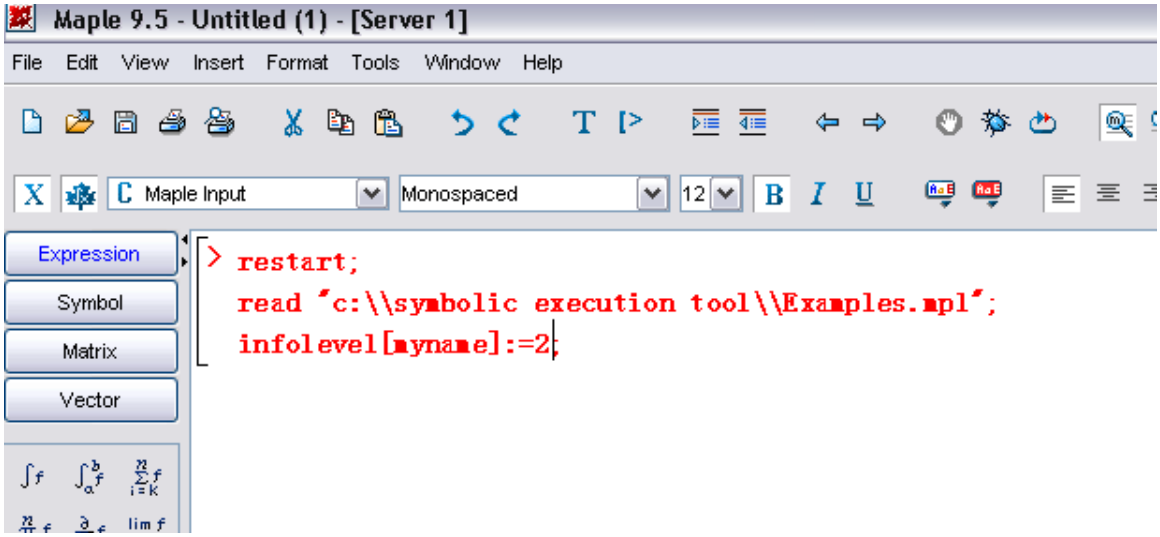

Figure 1: Shows the command to read the examples.mpl file

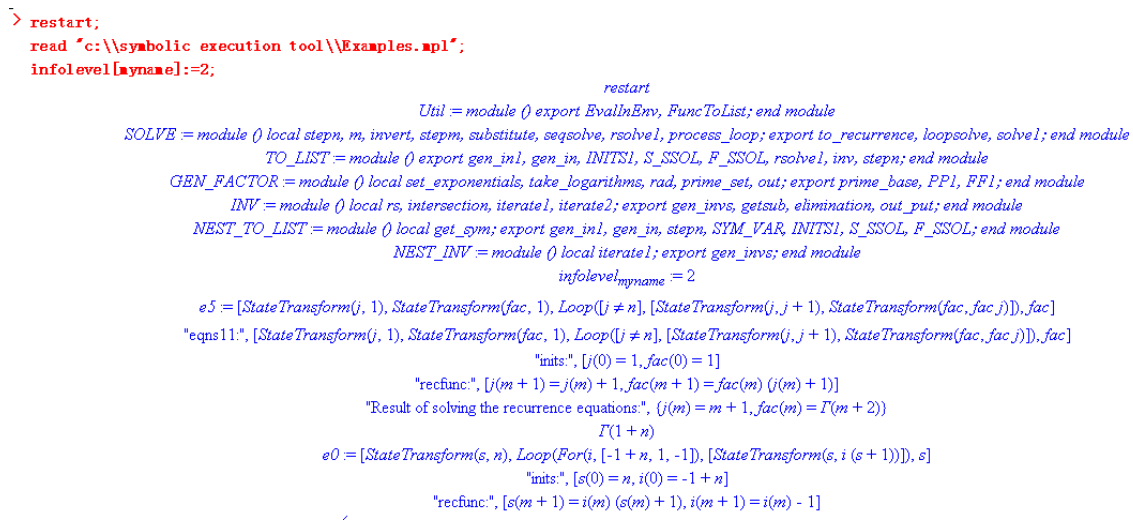

Figure 2: Shows the result from figure1 command.

All the example result file can also be download from **the examplesresult.mw**

Method 2: Test the Examples and the Modules Interactively.

Open the example.mpl file and copy three lines showing in figure 3 into the Maple work sheet.

To run main module, please type the following command:

restart;
read "C:\\symbolic execution tool\\mainmodule.mpl";
infolevel[myname]:=2;

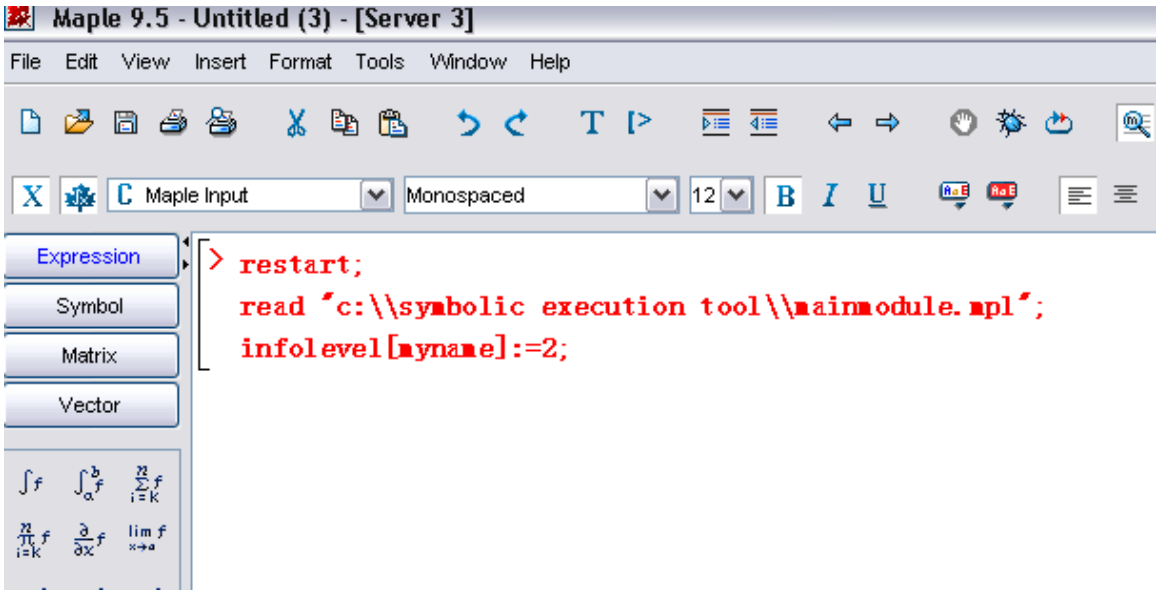

Figure 3: Shows the Command to Read the **mainmodule.mpl** File

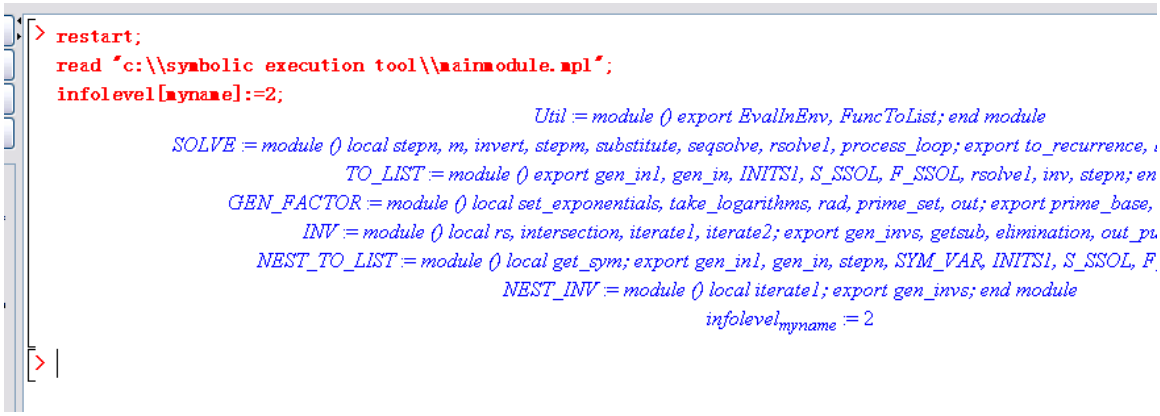

Figure 4: Show the Result from Figure 3 Command

To run factorial function, please type the followings:

```
ff:=proc(n)
  local j, fac;
  j:=1;
  fac:=1;
  while j<>n do
    j:=j+1;
    fac:=fac*j;
  end do;
 fac;
end proc:
```

e5:=GEN:-gen_eqns(ff);

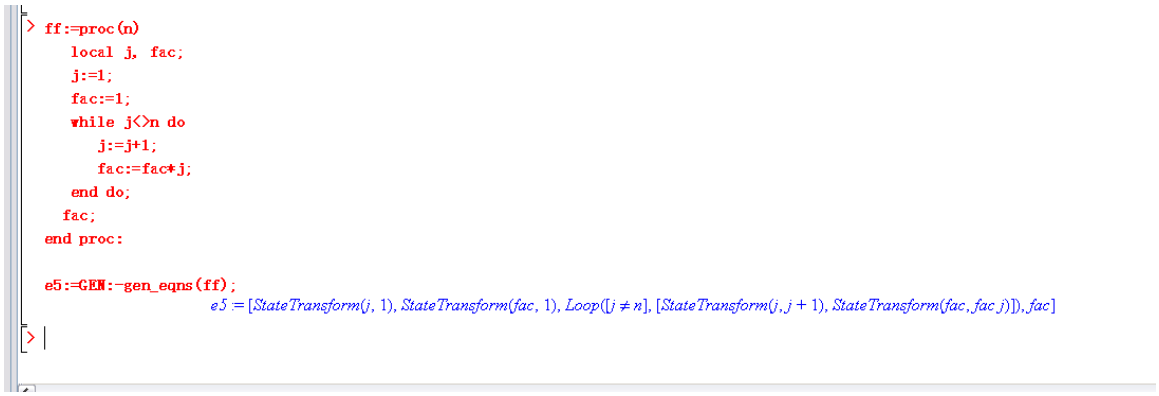

Figure 5: Shows Inputing the Test Function and Call the **gen_eqns** Function in **GEN** Module to Generate Relations.

Note: The input parameter value for the gen_eqns is the name of the test function.

To call solve function, please type the following:

SOLVE:-solve1(e5);

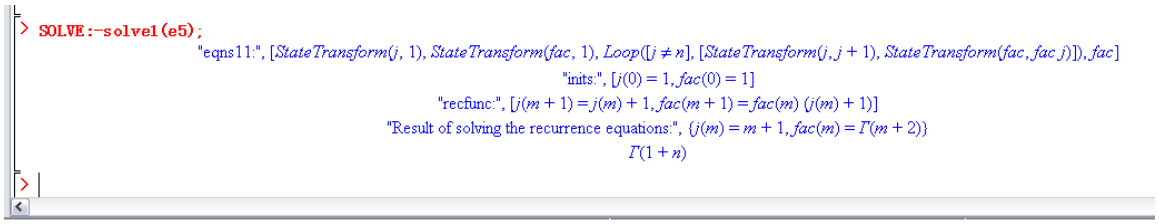

Figure 6: Shows Calling the **solve1** Funtion in **SOLVE** Module to Generate Initial Functions, Recursive Functions and Symbolic Result.

You can test other functions provided in the examples.mpl in the above method.

Comments: For the input program which can be solved by our symbolic computation tool, please reference Yun Zhai's Master thesis chapter 5 (System Analysis).

Also, it is not recommend using the Maple key word as the variable for the input program.